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A WEEKLY EPITOME
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MEDICINE.

(179) A Single Radial Pulse produced by Double Cardiac Contractions.

DR. K. DEHIO, of Dorpat, relates in the *Deutsches Archiv für klinische Medicin* (Band xlvii, Heft 3 and 4) a remarkable case of double contractions of the heart producing a single pulse at the wrist. The patient was a baker, aged 29, who had suffered for two years from more or less palpitation and dyspnœa. These symptoms had rapidly increased, œdema of legs and other tissues had set in, and pleuritic effusion on both sides; emphysema and general congestion had brought about a constant condition of orthopnœa. The heart's impulse was found to be diffused, there was marked distension and pulsation of the superficial veins of the neck, but the systemic arteries were moderately filled and showed no sign of disease. There was a soft systolic murmur audible at the apex and at the lower part of the sternum. The patient's condition at first improved under digitalis, but afterwards became worse. The pulse was then noticed to be altered, two pulsations following one another in quick succession, the second being the weaker of the two, then a long pause, followed by the recurrence of the twin pulsations and another pause; eighty-four such pulsations could be counted in the minute. This continued for several days, sometimes giving place to a normal pulse or to a regular succession of double pulses. Digitalis was again used, but without result, and the patient gradually got worse. A new feature then presented itself. The radial pulse could only be felt with the first of the twin contractions, although a double pulsation could be plainly seen in the vessels of the neck. Sphygmographic tracings showed that a very slight wave took place in the radial artery sufficient to raise the needle, although not perceptible to the finger. The double radial pulse occasionally returned for a time, and could be felt shortly before death, when the heart's contractions rose to 120, but disappeared again during the last hours, although the double pulsation was still plainly visible in the carotid arteries and in the veins of the neck. The principal cardiac lesion discovered *post mortem* was hypertrophy and dilatation of the right side of the heart. Dr. Dehio discusses at considerable length the various explanations that have been given of this phenomenon of double cardiac contraction with single radial pulse. The theory of Leyden—that a double contraction of the whole heart was closely followed by a contraction of the right side only is untenable in face of the fact that the sphygmograph detects the presence of a second pulsation at the wrist, too small in volume for recognition by the finger. The view that the contractions take place too quickly after one another for any blood to have entered the ventricles for transmission to the vessels by the second contraction is regarded as more probable. Dr. Dehio believes that in the present case the second pulsation was produced by contraction of both sides of the heart, as proved by careful sphygmographic tracings and the presence of the murmur with both contractions, but that the second of the two was abortive.

(180) Phthisis amongst Indians in Northern California.

DR. CHARLES E. WOODRUFF, Medical Department United States Army, relates some interesting observations upon what may be termed the diseases of civilisation amongst the Indian tribes of Northern California (*Med. Record*, January 24th, 1891). Phthisis has of late years become exceedingly prevalent and fatal, especially amongst young people. In eighteen months Dr. Woodruff states that he has seen "whole families swept out of existence" by the disease, which is most rife amongst the half-breeds. A healthy and robust white father and a healthy Indian mother produce families to all appearance healthy, until they are attacked with consumption, when the mother and children seem to succumb immediately, the father often remaining in good health. Two cases are mentioned where perfectly healthy girls of 17 have been attacked and have died in six months. To what extent the disease was prevalent before the advent of white men and habits of civilisation it is difficult to say, owing to the absolute untrustworthiness of Indian statements on the subject; but no doubt can be entertained of the rapid increase of late years. The ordinary life of the Indian was formerly passed almost exclusively out of doors; clothing was reduced to a minimum, and the food was restricted to forest produce and was of a thoroughly mixed character. With the introduction of civilised habits the Indian has learnt to huddle himself and his family into ill-ventilated huts; he wears clothes, but does not understand the necessity for changing them when they are wet through; while his diet has become more limited and largely consists of bacon. Added to these changes, he has suffered in a variety of ways from the introduction of venereal diseases. All forms of tuberculous disease are met with amongst these people, but

tuberculosis of the lungs appears to be the most fatal. A few cases become chronic, but they form the exception rather than the rule.

(181) Infectious Pneumonia followed by Peripheral Neuritis.

LEECH (*Medical Chronicle*, January and February, 1891) gives an account of a case of pneumonia which shows very well the occasional infective nature of this malady. A map accompanies the paper, and from it we learn that a number of persons in adjacent houses were all affected with pneumonia within a short time of each other. Dr. Leech's patient subsequently developed, four or five days after the crisis had occurred, loss of motor power in the lower extremities; it came on very gradually, and was preceded by loss of sensation. These symptoms progressed in the lower extremities, and subsequently the upper extremities became involved to a slight extent. The knee-jerk was abolished, and there was slight foot-drop; the muscles of the calf and arm were tender. A careful examination of the symptoms convinced Dr. Leech that these symptoms were due to peripheral neuritis. He points out that this is a very rare complication, and he concludes his paper by a very complete account of the previously published cases, in which peripheral neuritis has followed pneumonia.

(182) Generalised Vaccinia.

GAUCHER (*Annales de Derm. et de Syph.*, January, 1891) brought before the Paris Dermatological Society on January 8th, 1891, the case of a child that had been vaccinated with calf lymph. Eight days after the vaccination there were three good vaccine pustules on each arm. On that day the pustules became excoriated, the fever became severe, and the infant refused to suck. On the ninth day numerous pimples appeared resembling vaccine pustules. On the eleventh day a general eruption was present on nearly the whole body, occurring in places where auto-inoculation by rubbing was not possible. Some of these pustules advanced to umbilication, others became arrested in their evolution. Whilst the eruption progressed the general state grew worse, the lungs became engorged, and the child died with symptoms of asphyxia. *Post-mortem* examination showed intense congestion of both lungs, without hepatisation, spleen enlarged, and softening of the congested kidneys. In the liver scattered yellowish islands of fatty degeneration were found.

(183) Attitude of the Body in Parkinson's Disease.

BIDON (*Revue de Médecine*, January, 1891) points out that hitherto only two distinct types of attitude in this disease have been described, namely—one in which the body is flexed, and one in which it is extended. He is able to supply a third type, in which the body and extremities are extended but the head and neck are flexed; for he had a patient, of whom he gives figures, who ultimately took up this attitude after having passed through the common flexion type of position.

SURGERY.

(184) Pancreatic Cyst Treated by Laparotomy.

DR. MAURICE H. RICHARDSON has recorded (*Boston Med. and Surg. Jour.*, January 29th, 1891), a case in which a cyst of the pancreas was treated by laparotomy and drainage. The patient was a large powerful man, aged 50, who dated his illness from a period about five years earlier, when he felt something give way in the epigastric region while lifting a heavy weight; shortly afterwards he had a severe fall. Three or four months after this he began to suffer from attacks of pain in the epigastrium; after the pain passed off he often had diarrhœa. After nine weeks the attacks grew less frequent. Nine months before he came under treatment he had a very bad attack, and was jaundiced; since then the bowels had been loose, and he had lost nearly 4 stone in weight. In the epigastrium there was a slightly elastic tumour, the size of "a four-year-old child's head." It extended under the margin of the ribs, down to the umbilicus, was deep-seated, slightly movable, and moved about 4 inches on deep inspiration. No fat was found in the stools. The patient having been purged, the colon was filled with water, and was ascertained by palpation to be in front of the tumour; the stomach, being filled with air, was likewise found to be in front of the tumour, which was then diagnosed to be a pancreatic cyst. Laparotomy was performed; the incision, 4 inches long, was made in the middle line, 3 inches below the ensiform cartilage. The omentum was torn through, and the round fluctuating cyst brought into view; it was entirely adherent to the posterior wall of the stomach, above and in front, and to the transverse colon below. A fine aspirating needle was inserted, and a quantity of clear straw-coloured fluid drawn off; the opening was then enlarged, and a glass drainage tube inserted. No calculus or foreign body was detected. The edges of the opening were stitched to the abdominal wall. The edges of the wound were brought together with wire and superficial silk sutures. Siphonage was so arranged as to prevent any leakage of fluid. A dry dressing was applied. The patient recovered well from the operation. A good deal of fluid having the characteristics of pancreatic fluid was discharged from the cyst. The patient was discharged from the hospital a month after the operation with a small sinus, and when last heard of two months later was "quite smart," but there was still some discharge from the sinus.

(185) Craniectomy for Microcephalus.

BEFORE giving the details of a craniectomy performed by himself last November, Dr. Keen (*Medical News*, November 29th, 1890) mentions the only cases (2) of the operation done in Europe up to that date, and the case of a boy from whom he removed the cortical hand centre in December, 1889, for epilepsy. Eleven months after the latter operation the boy's condition had much improved; fits were less severe and frequent; disposition was considerably more docile; the child could play with others and possessed a fair vocabulary; the hand was slightly paretic. The European craniectomies for microcephalus were performed by Lannelongue, of Paris, with the view of annulling or diminishing cranial resistance to brain growth. His first case was a microcephalic idiot 4 years old, unable to stand until 3 years of age; it could only take liquids, babbled and slavered unceasingly, was always restless and inattentive, and constantly uttered cries. The head was very narrow with prominent vertex. In May, 1890, a strip of bone, 9 centimetres long and 6 millimetres wide, was removed from a little to the left of the sagittal suture,

without opening the dura. The habit of incessant crying ceased the day after the operation; in five weeks the child was calmer, tried to talk, and took notice of its surroundings. It has since grown able to walk and no longer drivels. The second case was an idiot of lower grade. Operated upon in June of last year, the time is alleged to be too short to judge of results. Dr. Keen's patient is a girl, 4½ years old, with small prognathic head; she never could walk, was constantly moving, wringing her hands, and slavering. Six inches and a quarter of the cranial vault, ¼ inch wide, were removed from a little to the right of the sagittal suture. Recovery from the operation was complete in five days. A further report as to results is promised.

MIDWIFERY AND DISEASES OF WOMEN.

(186) The Uterine Curette and Anæsthetics.

Dr. Geijl (*Nouvelles Archives d'Obstét. et de Gynécol.*, December 25th, 1890) does not consider that chloroform is necessary or even advisable, for the operation of scraping the endometrium in cases of endometritis. He maintains that the proceeding is absolutely safe provided that the manipulations be skilful, and adequate precautions against sepsis be taken. Cicatrices and atresia of the cervix need never occur, and hæmorrhage should cease directly the operation is performed. Dr. Geijl dilates the cervix with a tupelo tent. Within thirty-six hours the patient will be ready for the curette. The use of that instrument causes but little pain, and the little which it does cause is necessary for the detection of the most diseased spots on the endometrium. The patient is placed in the correct position and the tender spots are marked out by the touch of the sound. Then a 20 per cent. solution of hydrochlorate of cocaine is applied to the most tender parts, whilst the remainder of the uterine cavity is painted with a 10 per cent. solution of the same compound. The anterior lip of the os is then seized by means of a volsella, and held by an assistant, so as to keep the uterus fixed and well drawn down during the operation. The endometrium is dried with wool and then carefully scraped, especially at the tender points. The characteristic grating sound (*cri utérin*) should be heard over every part subjected to the curette, as it indicates that the diseased material has been thoroughly scraped away. Lastly, the uterus is washed out with a 0.05 per cent. sublimate solution. This washing is better than swabbing (*écouvillonage*). The after-treatment consists in the administration of antiseptic vaginal injections, and in the introduction of iodoform-glycerine tampons. With the above precautions the curette may be safely used in cases of pure endometritis.

(187) Head Presentation: Labour Delayed by Coccygeal Tumour.

Dr. Bar (*Annales de Gynéc. et d'Obstét.*, January, 1891) has exhibited before the Obstetrical Society of Paris a fœtus which during labour presented normally; the head was born without difficulty, and the body expelled easily as far as the umbilicus. The remainder of the fœtus resisted all natural efforts at delivery. Dr. Bar suspected a tumour of some part of the trunk, and confirmed his suspicion by careful palpation. He therefore cut through the body of the fœtus and pushed up the breech. The lower extremities were readily brought down by this manœuvre and the lower half of the fœtus delivered. The malformation which arrested the birth of the fœtus was a congenital coccygeal tumour of the usual type, held to represent an amorphous parasitic fœtus—a "teratoma." In the discussion on Dr. Bar's paper, Dr. Pajot stated that he had observed cases of delayed delivery of the lower part of the trunk; this condition usually signified either ascites or teratoma. Dr. Guéniot approved of the obstetric manœuvre adopted by Dr. Bar. It was based on the same principle as another operation in midwifery, where, the head having been delivered with the aid of the cephalotribe, decapitation was performed with the object of allowing room for the obstetrician's hand to draw down the fœtal arms, so as to permit the extraction of the body arrested by the breadth of the shoulders.

(188) Hernia of Gravid Uterus in Distended Cæsarean Section Cicatrix.

Dr. Sperling (*Arch. für Gynäk.*, vol. xxxvii, Part 2, 1890) relates a case where a woman in her third pregnancy suffered from hernia of the gravid uterus. The pelvis was flat and narrow in all dimensions (conjugata vera 2¾ inches). At the second labour the head had been avulsed in attempts to extract the child; in order to get it away the physician performed Cæsarean section. The cicatrix of the abdominal wound became distended. In the course of the third pregnancy the uterus pressed forwards into the great ventral hernia caused by the yielding of the cicatrix, and at length hung downwards, completely covering the pudenda. As the walls were abnormally thin palpation was exceedingly easy, and permitted of precise diagnosis. At the beginning of the seventh month premature labour took place; a living male child, hardly exceeding two pounds, was born without the aid of art. It lived only twenty hours.

(189) Normal Parturition in Last Stage of Phthisis.

Dr. Tarnier (*Journ. des Sages-Femmes*, February 16th, 1891) had under his care in January a parturient woman who was in the last stage of phthisis and rapidly sinking from the pulmonary disorder. Dilatation was almost complete on admission, and delivery at term absolutely normal, nor was there any evidence that childbed hastened the ravages of phthisis. It was certain that, on the other hand, the lung disease had no evil effects on the puerperium, no hæmorrhages, foul discharges, or other well-known complication of the puerperium occurring. A few days after delivery the patient was moribund. Dr. Tarnier then made the above note of her case. He added that it would be strictly included in his statistics. He insisted that every death in his lying-in wards should be included, whatever the cause might be. In this instance the two conditions were pure coincidences. The disease had nothing whatever to do with the pregnancy. It would be right to add, in statistical tables, "death from phthisis without puerperal affection." About the same time another woman was admitted, and was delivered normally. On the next day she was seized with acute pleuropneumonia, which proved rapidly fatal, without any septic or other complication locally. At the necropsy it was found that acute pleurisy predominated over the evidences of pneumonia. Dr. Tarnier declared that delivery had nothing to do with the death of the patient.

DISEASES OF CHILDREN.

(190) Antipyretics in Diseases of Infancy.

PROFESSOR DEMME, in the annual report of the Berne Hospital (*Concours Médical*, January 24th, 1891), relates his experience of the new antipyretics in children. In the first place, however, he holds that their employment is unnecessary in moderate pyrexia (101° to 103° F.); he prefers the application of cold damp cloths renewed every two hours; or when there is much nervous excitement or insomnia, lukewarm baths (79° to 82.5°), lasting five or ten minutes, and repeated once or twice a day. The propriety of using antipyretic drugs should be considered in cases in which there is a continuous temperature of about 104° F., and in adopting the treatment the cause of the pyrexia and the power of resistance possessed by the patient must be taken into account. These drugs are of value in enteric fever, acute rheumatism, and broncho-pneumonia; they should be used with great caution in fibrinous pneumonia, diphtheria, and the acute exanthems (measles, scarlet fever, etc.). In acute rheumatism, if there is a dislike to salicylate of soda or a tendency to diarrhœa and vomiting, he replaces it by salol. Quantity to be given daily in divided doses: salicylate of soda, 2 to 4 years, 8 to 15 grains; 5 to 10 years, 15 to 30 grains; 11 to 15 years, 38 to 45 grains; salol (in powder), 2 to 4 years, 12 to 16 grains, in three doses; 5 to 10 years, 22 to 33 or 44 grains, in three or four doses; 11 to 15 years, 33 to 45 or 60 grains, in three or four doses. In enteric fever, Demme has had good results with sulphate of thallin; he gives it in powder every two hours, each dose being for a child of 3 to 4 years, ⅛ to ¼ grain; 5 to 10 years, ¼ grain; 11 to 15 years, ¼ to ½ grain. In broncho-pneumonia, in which there is a liability to a long continuance of a high temperature and to relapses, Demme prefers antipyrin to all other antipyretics; he gives it dissolved in water with a little sugar and a few drops of cognac. He employs it also in the acute exanthemata and in serious diphtheria if the temperature becomes so high as to appear to call for an antipyretic. He gives it hourly in the following doses: 2 to 4 years, 3 to 6 grains; 5 to 10 years, 8 to 11½ grains; 11 to 15 years, 12½ to 15 grains. In the later stages of broncho-pneumonia, where the fever is of the hectic type, the antipyretics belonging to the aromatic series have little effect. Sulphate of quinine, on the contrary, not only hastens recovery, but actually "jugulates" the disease. He gives it in the following doses: 2 to 4 years, 3 to 6 grains; 5 to 10 years, 8 grains; 11 to 15 years, 11½ to 15 grains.

(191) Treatment of Asphyxia in Newborn Children.

IN a paper on life-saving methods in stillbirths (*American Journal of the Medical Sciences*, February, 1891), Dr. William T. Lusk briefly discusses the cause of the first respiratory movements of the child, and expresses the opinion that it is doubtful whether Engstrom's experiments for Preyer proved that inspiratory acts could be produced by peripheral stimuli, so long as the placental circulation was completely undisturbed. That the increased venosity produced by suspension of the placental circulation is capable of exciting the respiratory centre without the aid of peripheral stimuli, and that the latter were capable of exciting the respiratory act before the internal stimuli (increased venosity) had increased sufficiently to do so, were points proved by Engstrom's experiments, which thus give a partial explanation of the well-known fact that external stimuli may be able to excite respiratory movements, when the venous condition of the blood alone fails to do so. Dr. Lusk distinguishes two degrees of asphyxia at birth; in the milder, muscular tonus is preserved, and the head does not droop, the skin is dusky red or cyanotic, the conjunctivæ injected, the umbilical vessels congested, the heart acts slowly but forcibly, and reflex movements are easily produced by surface irritation; in such cases spontaneous respiratory movements often occur. In the severer cases muscular tonus is lost, so that the head and limbs droop; the skin is pale and cold, the eyes are glazed, reflex movements cannot be induced, the heart beats are slow and infrequent, and the umbilical vessels nearly empty. The indications for treatment are to clear out the air passages, to restore the irritability of the medulla, to increase the force of the heart's contractions, and to relieve the plethora of the heart and thoracic vessels. In the severer cases the child should be laid on a table and warmly covered, the fauces cleared with the finger, and, using it as a guide, a No. 8 gum elastic catheter should be passed into the trachea, and matters aspirated into the lungs during the ineffectual attempts at respiration removed by suction; for this purpose it may be necessary to introduce the catheter several times. Through the catheter insufflations should also be made, and after each insufflation the chest should be compressed with the hand. When occasional spontaneous respiratory movements begin to be noticed Sylvester's method may be employed, the tongue being pulled well forward. As soon as the heart movements become plainly perceptible the child should be placed in warm water, and the face sprinkled with cold water. The swinging method of Schulze should be employed to complete the establishment of the normal circulation. Schulze's method of artificial respiration, which Dr. Lusk recommends also in the milder cases from the beginning, is thus performed:—The child is grasped in such a manner that the operator's thumbs rest upon the anterior thoracic wall, the index fingers are in the axilla, and the three others are placed diagonally across the back; the operator then allows the child to hang down face upward at arm's length between his knees. In this position the capacity of the chest is at its maximum (inspiratory position), for the pectoral muscles draw the upper ribs upwards, the abdominal muscles draw the lower ribs down, and the weight of the liver pulls down the diaphragm. The child is next swung upward until the operator's arms are nearly horizontal. The swing is then stopped, the head falls downwards, the lumbar spine also is flexed, and the lower limbs fall towards the operator until the whole weight of the child rests on his thumbs. In this way the chest and abdomen are compressed, the diaphragm is forced upwards and an efficient expiration results. Further, a certain favourable effect is also produced on the circulation, for during the upward swing the blood is pressed from the left ventricle into the aorta and from the right auricle into the right ventricle; the surplus blood from the right ventricle finds its way through the ductus arteriosus into the aorta. At the same time the emptying of the left ventricle favours the flow of blood from the left auricle and permits the return current from the

pulmonary veins. With the downward inspiratory swing blood is aspirated into the thorax from the great veins (reflux from the aorta being of course prevented by the semilunar valves). By alternating the downward and upward swings, not only is respiration, but also the pump action of the heart, artificially imitated, and the feeble systole is reinforced.

(192) Systemic Infection in Secondary Pneumonia.

In three cases of whooping-cough complicated by pneumonia, Dr. P. Haushalter (*Rev. Méd. de l'Est*, February 1st, 1891) inoculated nutrient gelatine with the blood obtained from the finger. In all three cases he obtained cultivations of the staphylococcus pyogenes aureus. He discusses the question whether the systemic infection with this microbe was primary or whether it was secondary to the pneumonia, and arrives at the conclusion that the latter is the more probable hypothesis. He supposes that the sequence of events is that the bronchial catarrh and the altered nutrition due to the functional disturbance of the pneumogastric (which he assumes to be present in whooping-cough) permit of the free development of the staphylococcus, probably always present in the air passages. This microbial growth leads to epithelial desquamation and inflammatory exudation; the staphylococcus then penetrates into the interlobular tissue, from thence into the lymphatics, and finally into the blood. He would explain by this systemic infection the occasional occurrence, in the secondary pneumonias of whooping-cough, measles, and other acute infectious diseases, of tumefaction of the spleen, acute nephritis, endocarditis, and adynamia. He found that cultivations of the staphylococcus injected into the trachea of rabbits were capable of producing lobular pneumonia.

PHARMACOLOGY AND THERAPEUTICS.

(193) Effect of Koch's Tuberculin on Healthy Guinea-pigs.

At a meeting of the Académie de Médecine on February 10th M. Jaccoud (*Semaine Médicale*, February 11th, 1891) gave an account of an experiment he had performed with the view of testing Koch's statement that repeated injections of tuberculin in healthy guinea-pigs render these animals insusceptible of tuberculosis when inoculated. A very robust Angora guinea-pig, of the exceptional weight of 580 grammes, was chosen as the subject of the experiment. Injections of a 1 in 100 solution of the fluid were given every day or every second day. In two series of injections separated by an interval of eight days (from December 8th to 18th, 1890, and from December 27th, 1890, to January 4th, 1891), a total amount of pure "lymph," equivalent to 50 centigrammes (25 centigrammes in each series) was given. The sole appreciable effect was slight wasting; at the end of the second series of injections, on January 4th, the animal was found to have lost 26 grammes in weight. On the following day the half of a gland taken from a tuberculous guinea-pig was inoculated subcutaneously at the level of the right shoulder of the "subject." Exactly a month later—that is to say, on February 5th—the animal died, weighing only 450 grammes, or 130 grammes less than its original weight. *Post-mortem* examination revealed tuberculous glands in both axillæ, confluent grey granulations in both lungs, a patch of hæmorrhagic hepatisation at the apex of the right lung, and masses of caseous tubercles in the liver and spleen. M. Jaccoud sums up the case as exemplifying the minimum of survival in guinea-pigs after the inoculation of tuberculosis and the maximum of lesion which can be produced by such inoculation. "Therefore," he concludes, "previous impregnation of the organism with Koch's liquid had, in this case, no preventive action." By way of control a small healthy guinea-pig, weighing 485 grammes, was also inoculated on January 5th with the other half of the tuberculous gland used for the first one. It duly developed the disease, as was shown by the condition of the axillary glands, and by wasting. At the time of the report it had lost 88 grammes in weight, but was still alive; that is to say, it had already outlived by six days the other guinea-pig, which was supposed to have been "protected." At the same meeting M. Dujardin-Beaumetz stated that he had made some experiments on guinea-pigs with results similar to those reported by M. Jaccoud. He first treated animals in an advanced stage of experimental tuberculosis, but "death could not be warded off in these animals." Others he first inoculated with Koch's "lymph" and then with tubercle; in others again he reversed the process, first inoculating them with tubercle and afterwards with tuberculin. In both series the "subjects" and "controls" alike died after progressive loss of weight.

(194) Koch's Treatment of Tuberculosis: General Results.

The "Tuberculosis Commission" of the University of Pennsylvania, who have been watching the Koch treatment in the hospital, have published a preliminary report (*University Medical Magazine*, February, 1891). In the medical wards, the patients, about fifteen in number, who have been regularly receiving inoculations for tubercle of the lungs or larynx, are said in general terms to be "doing better." They have presented fewer unfavourable symptoms than could be noted in a similar series of cases during winter under any other treatment. In one case particularly good results followed—cessation of cough and expectoration, diminution of the *râles*, and gain of five pounds in weight. On the other hand, several cases, in spite of repeated inoculations followed by characteristic reaction, showed no improvement. One case under the treatment died, "although the injections were followed by the most moderate reaction." This patient (a man) was exceedingly weak on admission. Another case, with advanced lesions, was slightly improved. In the surgical wards the results are summed up as follows: "In general the surgical cases treated by the Koch injection have shown a gain in weight, an improvement in condition, and where the lesion was tuberculous some evidences of retrograde metamorphosis in the affected areas." With regard to the reaction, in all the cases where continued tests were made the percentage of hæmoglobin was found to diminish, the average loss being 10 per cent. The cases which improved gradually regained the original percentage. In twelve out of twenty-one cases there was development of albuminuria, probably due to leucocytes. Red blood corpuscles were found in seven, or one-third of the cases. Hyaline and granular casts were noted in four, or about one-fifth of the cases. In two albumen and casts were observed before the injections were begun.

At the Santa Cruz Hospital of Barcelona, Koch's treatment was begun on January 9th, a committee consisting of Drs. Alvaro Esquerdo, Durán, and Bofill, being appointed to watch the cases and report on the results. Their preliminary report on 23 cases is given in great detail in the *Revista de Ciencias Medicas de Barcelona*, January 25th and February 10th, 1891. In one of these cases (destructive ulceration of the external ear, etc.) the disease was probably malignant and no reaction followed the injections; in another (cystitis with vesico-vaginal fistula) the tuberculin was used for diagnostic purposes, and the result was negative. Of the remaining cases, 12 were examples of tuberculous disease of bones and joints, complicated in two cases with pulmonary mischief, and in one with tubercle of the epididymis; 4 were cases of phthisis, complicated in one case by tuberculosis of the bladder (colpocystotomy had been performed some time before with much relief so far as the bladder symptoms were concerned), and in another by tuberculous disease of the larynx and palate; 1 was a case of tuberculous cystitis; and 4 were cases of lupus (2 of the exedens and 2 of the erythematosus variety). The reaction in all these cases is minutely described, but little is said as to the immediate local effects of the remedy, and nothing at all as to any curative result. In one case of "tuberculous osteo-arthritis of the ankle," in a child of 10, it is stated that after several injections "the local lesions underwent further development, the masses of fungosities increasing, but without the phenomena of acute inflammation." In a case of tuberculous cystitis the injections caused increase of hæmaturia. In a case of phthisis in the second stage, though there was no diminution in the amount of expectoration or in the number of bacilli, there was some modification in the physical signs, and the air entered more freely in several parts of the lung; in one or two cases of joint disease the discharge from sinuses diminished and became serous in character, and in one, in which the knee was affected, the movements of the joint became more easy, and the limb could be more completely extended than before. In a girl, aged 7, suffering from tuberculous disease of both knees together with incipient phthisis, the injections caused albuminuria (20 per 1,000) and such prostration that the treatment had to be discontinued. "The three distinct localisations of tubercle which she presents have not become modified either much or little." In a case of lupus exedens of the temporal region with destruction of the eyeball, the treatment was given up, as it produced no effect whatever on the affected part. In another of lupus exedens of the supramaxillary region the injections were discontinued for the same reason. In the two cases of lupus erythematosus the usual reactive phenomena were observed, but from the report it cannot be gathered that cure or even marked amelioration was obtained in either of them.

At a meeting of the Medico-Chirurgical Academy of Naples on January 25th (*Riforma Medica*, No. 22, 1891), Dr. Gallozzi, speaking of Koch's treatment in surgical cases, admitted its diagnostic value in the fullest manner. He said that in glandular tuberculosis the reaction, though distinct, was not so marked as in disease of bones and synovial membranes. Children bore the treatment well, and derived the greatest benefit therefrom. He had seen extraordinary therapeutic results in a boy with tubercle of the testis. He had also seen good results in lupus, but he would prefer to wait before giving a decided opinion on the treatment as a whole. Professor Massei, speaking of the treatment in laryngeal tuberculosis, while admitting the "elective action" of the remedy in such cases, also reserved his opinion. At the end of the discussion the Academy unanimously passed a resolution to the effect that the experiments hitherto made with Koch's fluid, so far from inducing practitioners to desist from using it, should encourage them to persevere in studying its curative effects.

Dr. W. D. Smith reports (*Montreal Medical Journal*, February, 1891) three cases of pulmonary phthisis treated by Koch's method in Dr. MacDonnell's wards in the Montreal General Hospital. The patients were all, apparently, favourable subjects for treatment; but though the usual reactions, to a more or less marked degree, followed the injections, the therapeutic results seem to have been practically *nil*. In none of the cases was any change noted in the cough or the expectoration, and in one of them it is stated that the most important change observed up to the date of report was "a decided loss of weight." Dr. R. E. McKechnie (*ibid*) reports the results of the treatment, in surgical cases, under the care of Drs. Roddick, Shepherd, and Bell, in the Montreal General Hospital. Full particulars as to the reaction are given, which, on the whole, are similar to those observed elsewhere, but little is said as to any definite therapeutic result.

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(195) Diuretic Action of Mercurials.

Jendrássik (*Deutsch. Archiv f. klin. Med.*, xlvii, pp. 226-288) contributes a long article on this subject as a sequel to his earlier observations (*Deutsch. Archiv f. klin. Med.*, xxxviii, 1885). The latter excited very considerable attention on the Continent, where the diuretic action of mercurials does not seem to have been generally recognised or applied in practice, although in this country the combination of blue pill with digitalis has long been a classic prescription in the treatment of severe cardiac œdema. In Jendrássik's paper the later literature is given fully. By the use of calomel he has seen the urine rise from a few ounces to usually about 250 ounces in the twenty-four hours, the maximum reported being 370 ounces. All the mercurial preparations exercise the diuretic action, but he finds calomel on the whole most convenient. In a case of aortic disease with great œdema, and small amount of urine containing albumen, tube casts, and blood, he gave it with the following results: On October 18th, urine 13 oz.; 19th, urine 30 oz., 3 gr. calomel 4 times; 20th, urine 30 oz., 3 gr. calomel 5 times, which caused severe diarrhœa in spite of opium being given; 21st, urine 25 oz., 3 gr. calomel 4 times, diarrhœa continued; 22nd, urine 63 oz., calomel stopped; 23rd, urine 113 oz.; 24th, urine 86 oz., œdema and breathlessness gone; 25th and 26th, urine 40 oz. Smaller doses often suffice without causing any diarrhœa. The indications for the use of mercury as a diuretic are as yet by no means clear or fixed, but it acts very much better in cardiac than in other cases. In hepatic ascites and in pleural effusion its action is generally *nil*, although in a few cases it undoubtedly exerts a diuretic effect. In renal dropsies most observers find that it does not act well, although a few have reported successes, and

Jendrássik gives in his paper some successful cases. He also tried its effect on healthy young men, but got absolutely no increase of diuresis, and concludes that with a normal condition of the circulation any diuretic effect must be slight, and is extremely doubtful. The cause of the diuresis has never been satisfactorily determined, although many theories have been promulgated. Jendrássik examines these in great detail. It is agreed that mercury does not act by raising the blood pressure or by stimulating the heart. Weinstein is of opinion that the cathartic and sialogogue effects withdraw fluid from the blood, thicken it, and thus induce an inflow of the exuded serum. Such a theory is untenable, as the diuresis is obtained often with doses too small to cause diarrhœa, and also when the latter is prevented by opium. Spiller Locke, Talfourd Jones, and others, hold that the mercurials increase the amount of urea in the blood, and that the latter has a diuretic action. The amount of urea, however, is never sufficient to account for the great increase of urinary water, and, further, other substances, such as salicylate of sodium, which greatly increase the urea do not act so powerfully as the mercurials; in Bright's disease also, where urea is in excess in the blood, no diuresis results. A third theory is that the kidney epithelium is directly stimulated, and this is the one most generally held. Jendrássik, however, points out that in the healthy no diuresis occurs, and further criticises the experiments on which the opinion is based. Several other explanations of its action are similarly shown to be thought untenable. Jendrássik himself seeks the explanation in the condition of the blood. In cardiac disease with dropsy the blood, he says, is denser than normal. In addition the mercury forms with its albumen a combination which increases the tendency of fluids to dialyse into it. Experiments with dialyses are given in proof of this. Hence when mercury is given the exuded serum tends to diffuse readily into the capillaries again, and the watery part of it is excreted by the kidneys. In ascites and pleurisy with effusion the exudation is extremely dense, much more so than dropsical fluid, and hence will not diffuse readily. This is the reason why calomel fails to act in such cases. In Bright's disease, on the other hand, the blood is so watery that diffusion of the exuded serum will not take place into the capillaries. For particulars the original paper should be consulted.

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(196) The Action of Caffeine on Tissue Metamorphoses and Heat Phenomena.

Reichert (*New York Med. Journ.*, 1890, p. 456) points out that the previous observations are most discordant, some observers finding an increase in the excretion of urea and carbonic acid, others a diminution. Reichert, therefore, has tried to get an answer to the question by means of the calorimeter, and he finds that caffeine increases heat production, and, as a corollary, increases destructive tissue metamorphosis. To explain the efficiency of coffee in supporting the system and enabling more work to be performed upon restricted diet it cannot be supposed that it is a lessened heat dissipation, the quantity of heat thus conserved becoming apparent in work, for the calorimeter shows that caffeine increases both heat production and heat dissipation. There seems to be no other explanation than that the virtues of coffee in the wear and tear of active life are entirely subjective and depend upon a general excitation of the higher tissues and chiefly upon its powerful exhilarant action on the mental processes.

DERMATOLOGY.

(197) Histological and Bacteriological Research on Leprosy.

Gianturco (*Giornale della Associazione Napoletana di Medici e Naturalisti*, 1890, Fasc. 4, p. 403) obtained fragments of cutaneous lepromas from the body of a man who had been affected with mixed leprosy. Histological examination showed these lepromas to contain a great number of bacilli. According to Gianturco, the localisation of the bacilli lepræ and their relations to the cellular elements vary during the period of the morbid process. In the most recent nodules the bacilli are almost all present in the cellular elements, and the rounded zoogloea mass which is formed later is not then produced. At a more advanced stage the bacilli multiply, forming a globular mass, rarefying the cellular protoplasm in which vacuoles form. The nucleus is in turn invaded, is badly coloured, atrophies, and then, probably in consequence of the destruction of the cell, the masses of bacilli become free in the lymphatic channels. Gianturco has confirmed the existence of the same lesions in the lepromas of the larynx. In the liver he found an increase of the interstitial tissue under the form of embryonic cells, and in places true nodules continuous at their periphery with the interacinous connective tissue. The hepatic cells are in a general way intact, especially those of the centre of the lobule, yet those of the periphery of the lobule may present adipose infiltration and granulations of biliary pigment; their nuclei, swollen at the commencement, afterwards present vacuoles. The lymphatic glands contained, both in the medullary and cortical substance, leprous nodules showing a giant cell at their centre. With the juice of a cutaneous (not ulcerated) leprous nodule, Gianturco made inoculations on blood serum and on glycerine agar, the tubes being kept at a temperature of 37° C. Cultures developed in all the tubes, one of which presented at the end of seven days an isolated colony of the size of a hemp seed, somewhat projecting from the surface of the agar, of a greyish colour, and perfectly similar to the colonies of bacilli lepræ described by Bordone-Uffreduzzi. The bacilli of this colony were of variable length, with clear spaces, and some colouring strongly, and possessing a terminal swelling. Inoculations made with these bacilli on glycerine agar give rise at the end of two days to colonies which develop somewhat rapidly on the surface of the agar. On glycerine serum they develop rather quickly, but on agar alone the development was very slow, and the colonies much smaller than on glycerine agar. They did not develop on other media. The colonies were rounded, with finely serrated borders, scarcely projecting from the surface of glycerine agar, a little more prominent on glycerine serum. They were of a greyish colour, appearing a little yellow on the serum, and resembling small leaves of trefoil when developed along the line of inoculation. They developed well at 37°, but the growth was arrested at 20° to 25°, the faculty of development being preserved for a long time. The above bacteriological researches

support the statements made by Bordone-Uffreduzzi, but it most not be forgotten that other observers, and especially Campana, who has devoted much time to the matter, have never succeeded in cultivating the bacilli lepræ.

(198) Skin Eruptions in Blenorrhagia.

M. PERRIN (*Annales de Derm. et de Syph.*, November, 1890) is of opinion that in the greatest number of cases blenorrhagia is of a parasitic nature. Orchitis, cystitis, prostatitis, rheumatism, eruptions, etc., may be produced. Cutaneous determinations are either polymorphous, scarlatiniform, or rubeoliform. These eruptions possess no exclusive objective features by which they are rendered distinct from erythemas produced by other external or internal influences. The pathogenesis of erythemas which occur during blenorrhagia is complicated. The causes of the eruptions may be common, or may be found in blenorrhagia or in balsams. The author considers that these erythemas may be due to gonohæmia. They are usually angio-neurotic erythemas caused by blenorrhagia acting on the vasomotor system. Gastro-intestinal disturbances often result from balsams, and especially copaiba, and their action may give rise to erythematous rashes, the tendency to which seems to be increased by the presence of blenorrhagia.

BACTERIOLOGY.

(199) Microbe of Leukæmia.

MM. KELSCH and VAILLARD (*Annales de l'Institut Pasteur*, Tome iv, No. 5, May 25th, 1890) give the result of careful observations on a case of acute leukæmia with numerous lymphomatous growths in the subcutaneous connective tissue and in the bones, with enormous hypertrophy of the glands at the hilum of the liver. The patient was a soldier, aged 24, who died with the characteristic symptoms of the disease—extreme weakness, tumours, enlargement of the organs, and hæmorrhage. Even during life a few short bacilli were found in the blood, and a drop of blood inoculated into broth and incubated gave pure cultivations of the same bacillus. A second examination gave negative results. All the organs and glands were enormously enlarged; there were small hæmorrhages in the intestine and in the lungs; the humerus of one side was fractured and the red marrow was enormously increased; some of the ribs were also fractured. From the blood and from one of the tumours bacilli identical with those found during life were obtained by cultivating in broth, which became turbid in forty-eight hours. The blood and the juice of the tumours, when examined under the microscope, exhibited similar non-motile bacilli, short, thick, round at the extremities, a little longer than broad—sometimes, however, drawn out into a longer rod, in which case the diameter was always diminished, being about half as great as the length—sometimes isolated, sometimes two or four were placed end to end. They were easily stained with alkaline solutions of methylene blue, or with weak alcoholic solutions of gentian violet and of methyl violet and fuchsin, but they were scarcely tinged by Gram's method; the central part remained uncoloured, whatever stain was used. Similar organisms were also found in sections of the tumour. They developed rapidly in beef broth at a temperature of 35° C. First a delicate flocculent precipitate appeared, which gradually increased in density; the organism in such cultivations forms chains; it grows more slowly in broth at the temperature of the room; but on gelatine it grows rapidly without liquefying it on the surface; it has a peculiar pearly lustre, is translucent and iridescent; the margins of the thin plate growth are irregular or sinuous. As the growth gradually increases in thickness it becomes more opalescent. On potatoes it also grows at a temperature of 35° C., appearing as a moist, glistening, mucous-looking layer, at first pale yellow and gradually becoming yellowish-brown. It grows both in contact with air and *in vacuo*. A cultivation injected under the skin of a white mouse kills it in twenty-four hours, the bacillus being found in the blood of all the organs. Injected into rabbits, similar results are obtained in twenty-four to thirty-six hours; in neither case is there any appreciable change in the organs themselves. The authors, after giving an account of the histology of the disease, acknowledge that their results must be looked upon as tentative and incomplete until further corroboration is obtained.

(200) Etiology of Grouse Disease.

PROF. E. KLEIN (*Centralbl. f. Bakteriologie u. Parasitenk.*, No. 2, Band ix, January, 1891) adds some notes to his observations already published on the etiology of grouse disease. He finds that the bacillus of the grouse disease as it occurs in autumn is not nearly so virulent as that obtained from the disease during the spring months, the bacilli being obtained from the heart blood in the autumn and from the lungs in the spring. Only two out of ten mice that were inoculated died; all the eight that remained alive were refractory to the action of the spring grouse bacillus. The control mice inoculated with the same spring culture all died in from twenty to forty hours. The one attack of the milder autumn disease rendered the animals immune to the more virulent spring disease.

OPHTHALMOLOGY.

(201) Surgical Treatment of Granular Conjunctivitis.

DARIER (*Recueil d'Ophtalmologie*, December, 1890) says that most of the methods employed to cure granular conjunctivitis are ultimately successful, but the time occupied in the cure is usually very long, and in many cases the cure is only temporary. This method of treatment is based upon the opinion that the *trachomcoccus*, which has been found and described by Sattler and Michel, is the pathogenic agent in granular conjunctivitis. This *trachomcoccus* should be entirely removed, and this can only be done effectually by surgical methods. He divides the operation into six steps: (1) Anæsthesia by chloroform. (2) Enlargement of the palpebral fissure. (3) Complete eversion of the eyelids, so that the whole of the conjunctival surface may be exposed. (4) Scarification of the conjunctiva, the cuts being deep, and in parallel lines to the edge of the eyelid. (5) Scraping with a Volkmann's spoon. (6) Thorough brushing and washing with a solution of perchloride of mercury (1 in 500), the whole of the scarified surface being brushed with a hard brush. He has found this method very effectual, most of the cases treated being cured in about eight days, without the supervention of keratitis or ulcers in the cornea.

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